

# Employment Status of Narcotic Addicts One Year After Hospital Discharge

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**I**N AN EFFORT to gain more knowledge toward improvement of hospital treatment, a study was undertaken of the employment status of 100 narcotic drug addicts 1 year after their discharge from the Public Health Service Hospital at Fort Worth, Tex. The study also included the relation of their posthospital employment to age, education, ethnic group, hospital vocational assignment, and their use of psychological help during hospitalization.

The results of previous followup studies of narcotic addicts contributed little to improvement of hospital treatment procedures. The studies of Pescor (1), Diskind and Klonsky (2), and unpublished data of J. A. O'Donnell, associate director, National Institute of Mental Health Addiction Research Center, indicated that more of the addicts discharged under compulsory supervision abstained from drugs than did those without such supervision. Several followup studies of narcotic addicts reported their employment status in addition to their addiction status.

In a study in Great Britain, Clark followed 50 physicians and nurses who had been hospitalized for drug addiction (3). Thirty-three (66 percent) continued to work in their professions 2 to 12 years following hospital treatment, but

some were interrupted by periods of readdiction; 13 (26 percent) had no gainful employment; and 4 (8 percent) retired or changed occupations.

Duvall and associates (4) reported employment status 5 years after discharge of male patients discharged to New York City from the Public Health Service Hospital in Lexington, Ky. A stratified sample of 453 patients was chosen by disproportionate weighting from 11 groups of a population of 1,359 addicts: 1,105 males and 254 females. They reported employment status of employable males only. After adjustment for disproportionate sampling and disproportionality of employable males, the estimated percentage of all employable male discharges engaged in full-time employment 5 years after discharge was 37 percent.

Diskind and Klonsky (2) reported employment status of 50 former addict parolees from New York correctional institutions. These subjects were part of a group of 66 who had successfully completed a median period of 16 months under parole supervision. Before the followup study, an additional mean period of 2 years and 9 months elapsed subsequent to parole termination. Sufficient information could not be obtained on 16 of the 66 subjects. Thirty-five (70 percent) of the remaining 50 subjects were reported fully employed and 15 (30 percent) irregularly employed.

## Hospital Program

The treatment program of the hospital at Fort Worth has been recently described (5). A broad range of services exists, organized to pro-

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vide a therapeutic milieu. Three components of the program are relevant to our study.

Most of the addict patients did not complete high school. They are encouraged to improve their education while hospitalized. The hospital offers courses from the beginning level in reading, writing, and arithmetic, through high school, and patients may earn high school equivalency certificates. In addition, some classroom instruction is offered in skilled trades. We assume that this educational service helps patients, but we have had no direct evidence to support this assumption.

Most of the patients enter the hospital with limited vocational skills and histories of unstable and erratic work patterns. Those who are physically able are assigned to jobs in the hospital. The majority of these assignments require little or no skill, and some relate in only a limited way to employment available outside the hospital. However, the hospital could not function properly without the aid of these workers. Apprentice trade training has been developed, but only about 25 percent of the patients can be enrolled.

When possible, work assignments are based on the patients' educational and vocational backgrounds, interests, aptitudes, and abilities. But most initial assignments are made to fill vacancies in the hospital's laundry, food service, or garment and furniture industries. After 2 months in their initial assignments, patients may request transfer to other work. Most of these requests can be promptly fulfilled, except for positions which require only one or two persons, such as X-ray technology. Little information has been available on whether discharged patients obtain employment in occupations they learned in the hospital and whether different kinds of work assignments lead to differences in posthospital employment.

Patients are invited, not required, to participate in psychotherapy or counseling sessions (individual or group). Group sessions are conducted by psychiatrists, physicians, nurses, social workers, vocational counselors, and others. These sessions are usually held once a week, and they are supervised by psychiatrists. We can only assume that this interaction is beneficial to the patients, since no followup information is available.

## Subjects

The 100 subjects consisted of all prisoner patients released from the hospital from March 10, 1961, to August 30, 1963, who were required to have parole or mandatory release supervision for at least 1 year. Two former patients were excluded because they were reported physically unable to work and on public assistance. All subjects were male. The hospital does not admit female addicts. During this period an additional 177 prisoner patients were released, but they were excluded from the study because they had less than 1 year of compulsory supervision. During the same period 1,054 voluntary addict patients were also released.

The study group therefore did not include all addict patients released during this period, and a bias may have resulted from restricting the group to those for whom reasonably reliable information was available. For this reason, the results cannot be considered conclusive regarding the entire addict population.

The mean age of the group at the time of release from the hospital was 32.4 years and the median was 31.8 years. The ages ranged from 21 to 54. Twenty-seven (27 percent) of the men were classed as white. Thirty-five were Mexican, and 15 were Puerto Rican; together these Latin Americans comprised 50 percent of the group. Twenty-three were classed as non-white (21 Negroes and 2 orientals). The mean years of education of the group at the time of admission was 9.2, with the median 9.5 years and the range 1 to 15. Only 26 had completed high school. The mean duration of hospitalization of the 100 subjects was 34.8 months, the median 39.8, and the range 5.6 to 76.7.

## Data Collection

Information was obtained from the clinical record of each subject for the following six items: age at time of discharge, ethnic background, years of education, completion of high school, principal vocational assignment during hospitalization, and use of scheduled psychological help in the hospital. Information in the record concerning birthdate and years of education had been obtained from the subject at the time of admission.

*Ethnic background.* Ethnic background was

determined by observation as well as from the subjects' admission records. We classed subjects in three categories: white, Mexican or Puerto Rican, and nonwhite. These were termed "ethnic categories," although they were distinguished only partially by race. A subject was classed as Mexican or Puerto Rican if he or his parents were born in Mexico or Puerto Rico.

*Completion of high school.* This additional measure of education was included because of the possibility that completion of high school might be relevant to posthospital employment independent of years of education. Some of the subjects completed high school by earning high school equivalency certificates while hospitalized.

*Vocational assignment.* Subjects were classed as having their principal vocational assignments during hospitalization in an industry or in a hospital service by greater length of assignment in one or the other. The garment and furniture industries of the hospital were operated as self-supporting enterprises. (The garment industry was closed in 1964.) They provided a production line experience simulating outside factory work. The productivity requirements were more demanding than other work assignments. Pay in the form of cigarette awards was provided for meeting production standards. (Cigarette awards were discontinued in 1964.)

The nonindustry assignments consisted of work in hospital services (engineering and maintenance, housekeeping, laundry, food service, medical and dental laboratories, library, education, recreation, and others). Generally, these assignments had less demanding productivity requirements and a more relaxed working atmosphere. Patients in them had more free time and energy for psychotherapy, ward meetings, education, and other activities. The hospital service assignments generally have more formal trade-training opportunities.

We wished to learn whether the production line experience of comparatively hard work with pay led to posthospital employment more frequently or less frequently than easier work without pay but with more opportunity to use (or not use) other therapeutic resources of the hospital.

*Use of psychological help.* Subjects were classed as users of psychological help if they participated in at least one scheduled session, and as nonusers if they attended no sessions. Records were not sufficiently consistent or complete to determine how many sessions each subject had or to judge the level of his emotional investment in the process. The definition of user therefore included subjects who made at least a minimal effort at participation.

*Posthospital employment.* Questionnaires were sent to the probation officers of all the subjects requesting (a) date of last contact with subject, (b) whether the subject was employed, (c) the kind of work the subject was doing, and (d) how long the subject held the job. Twenty-seven probation officers from 15 States and Puerto Rico completed and returned the questionnaires. In several instances parole supervision had been transferred, and the questionnaires were forwarded for reply. The reported date of last contact with subjects varied from March 1962 to August 1964. Each subject had been released from the hospital at least 1 year before time of last contact. From the questionnaires, we classed subjects as employed or not employed at 1 year following release from the hospital.

### Analysis of Data

Multiple regression analysis was used to predict the dichotomous criterion variable, employed versus not employed, based on the independent variables of age, ethnic group, years of education, completion of high school, vocational assignment, and use of psychological help.

To represent the categorical grouping of ethnic group quantitatively, the three ethnic groups were combined into two dichotomies and both dichotomous variables were included in the computation. One dichotomy consisted of white versus Latin (Mexican and Puerto Rican) and nonwhite; the other consisted of white and Latin versus nonwhite.

A similar procedure was used in relation to high school equivalency earned in the hospital and completion of high school. Fourteen subjects earned high school equivalency certificates in the hospital. In one dichotomy of high school completed versus not completed, these

subjects were included in the high school completed category; in the second, they were included in the not completed category. Both variables were included in the analysis.

### Employment Outcome

The questionnaires completed by the probation officers revealed that 63 of the 100 former patients were employed. Of the 37 not employed, 11 were confined in institutions subsequent to parole revocations or new convictions.

Of the employed subjects, 5 had supervisory or technical jobs, 7 were in clerical or sales work, 33 were working at the skilled and semiskilled level, 6 were in personal service work, and 12 were working at the unskilled level. We were unable to compare kinds of posthospital employment to skill level of work performed in the hospital, because our records in most instances gave only the assigned work area rather than specific duties of the assignment.

During hospitalization only 8 of the 100 subjects had had their principal work assignments in the laundry and food service. Most prisoner patients leave the laundry and food service as soon as they can. Four of the eight were employed and four not employed.

Six of the 63 employed subjects were engaged in occupations which they learned while hospitalized. None of these had had industry assignments. Following are brief descriptions of their experience.

1. A 30-year-old white man was recurrently addicted for 9 years before hospitalization. He was in military service for 7 years and subsequently attended college for 1 semester. He worked as a freelance musician, playing the bass violin. During hospitalization he was assigned to music therapy and housekeeping. He studied piano, and eventually he was able to lead a small hospital orchestra. Since leaving the hospital he has been working as a jazz pianist.

2. A 32-year-old Latin American came to the hospital after approximately 10 years of difficulty with narcotics. He had completed 2 years of college, and he had worked as a sales clerk and mechanic. While hospitalized he received on-the-job training in X-ray technology and medical technology. We assisted him in getting a job as X-ray technician when he was dis-

**Table 1. Summary of results for each significant predictor variable and correlation estimates**

Predictor variable	Results by criterion group		Correlation estimate <sup>1</sup>
	Em- ployed (N=63)	Not em- ployed (N=37)	
Years of education (mean)-----	9.7	8.3	<i>rpb</i> 0.24
	Percent		
Completed high school-	49.0	24.0	$\phi$ 0.25
In industrial assign- ments-----	22.0	46.0	$\phi$ -.25
Used psychological help-----	75.0	51.0	$\phi$ .24

<sup>1</sup>  $P < 0.05$ .

NOTE: Percent completed high school includes subjects who earned high school equivalency certificates during hospitalization.

charged, and he was still working in the same job 14 months later.

3. A 36-year-old Latin American had been using narcotics for 8 years. He had quit school while in the ninth grade. He was in military service for 5 years, and after his release he worked intermittently for 5 years as a waiter. He received on-the-job training in dental technology while in the hospital, and was assisted by our staff in finding employment in this field. He was still employed as a dental technician 30 months after discharge.

4. A 22-year-old white man had become addicted to narcotics about 9 months before his arrest. Before that time he had smoked marijuana for about 6 years. He had completed the ninth grade in school and had limited experience as a sewing-machine salesman and aircraft dismantler. During his hospitalization he earned a high school equivalency certificate, and he was trained in maintenance mechanics. According to the probation officer, he was employed in maintenance mechanics.

5. A 34-year-old Latin American from Puerto Rico had been using narcotics for 6 years. After completing high school, he spent 1½ years in the military service. He had had limited experience as a bartender and shipping

clerk before hospitalization. While hospitalized, he studied commercial art and did lettering and sign painting for our education unit. According to the report from the probation officer, he was employed in sign painting.

6. A 33-year-old Latin American from Puerto Rico had been using narcotics for 10 years following his release from the Army in 1950. He had completed high school and had worked as a bellboy for 2 years before hospitalization. In the hospital he studied radio and television servicing and also worked as an instructor in the radio and television school. His probation officer reported that he was employed in radio and television repair.

### Predictors of Posthospital Employment

Four of the independent predictor variables correlated significantly with the employed versus not employed criterion, as shown in the right-hand column of table 1. These were years of education, completion of high school, industry work assignment in hospital, and use of psychological help. The table also shows a comparison of mean years of education and percentages of each of the other significant predictor variables for the employed and not employed groups.

The employed group had a mean of 9.7 years of education and the nonemployed had a mean of 8.3 years. Completion of high school was significantly correlated with posthospital em-

ployment ( $\phi=0.25$ ,  $P<0.05$ ), but this correlation was obtained by counting subjects who earned high school equivalency certificates during hospitalization with high school graduates in the high school completed category. When the second dichotomy was used, in which equivalency achievement was included with high school not completed, the correlation was only 0.12 and not significant. Twelve of the 14 equivalency achievers were employed. As shown in table 1, 49 percent of the employed subjects completed high school (by graduation or equivalency), in contrast to 24 percent of the not employed. Conversely, of the 40 subjects who completed high school, 78 percent were employed, in contrast to 63 percent of the total group.

The phi coefficient for industry versus non-industry vocational assignment was  $-0.25$ , significant at the 0.05 level. The negative sign indicates that industry vocational assignment was associated with nonemployment. Forty-six percent of the not employed group had industry assignments, while only 22 percent of the employed group had such assignments. Conversely, 78 percent of the nonindustry assigned subjects were employed, in contrast to 54 percent of the industry assignees and 63 percent of the total group. Employed subjects from both industry and nonindustry assignments were distributed in all kinds of employment listed previously. However, 29 percent of the employed industry subjects were engaged in unskilled

**Table 2. Intercorrelations among hospital and background variables and employment**

Variables	Ethnic group		Years of education	High school vs. no high school		Industry vs. non-industry	Psychological help (use vs. nonuse)	Employment vs. nonemployment
	1	2		1	2			
Age-----	0.08	0.03	-0.03	-0.01	-0.03	-0.13	<sup>1</sup> -0.25	0.15
Ethnic group:								
1. White vs. other-----			.17	.19	.00	-.02	.15	-.14
2. White and Latin vs. other-----			-.06	-.04	-.11	-.15	.06	-.07
Years of education-----				<sup>2</sup> .67	<sup>2</sup> .71	<sup>2</sup> -.27	<sup>2</sup> .37	<sup>1</sup> .24
High school vs. no high school:								
1. Including equivalency-----						-.11	<sup>2</sup> .33	<sup>1</sup> .25
2. Excluding equivalency-----						-.10	<sup>2</sup> .33	<sup>2</sup> .12
Industry vs. nonindustry-----							<sup>1</sup> -.20	<sup>1</sup> -.25
Psychological help (use vs. nonuse)-----								<sup>1</sup> .24

<sup>1</sup>  $P<0.05$ .    <sup>2</sup>  $P<0.01$ .

work, while a smaller percentage, 16 percent, of the employed nonindustry subjects were in unskilled work. The posthospital employment of the industry subjects seems to have been less favorable on skill level as well as on the employed-not employed criterion.

Use of psychological help was positively associated with posthospital employment ( $\phi=0.24$ ,  $P<0.05$ ). Of the employed group, 75 percent used this service while hospitalized, in contrast to 51 percent of the not employed and 66 percent of the total group.

All the intercorrelations among background and hospital variables and employment are shown in table 2. Neither age nor ethnic group was significantly related to posthospital employment. Several significant associations were noted among the independent variables. Age was negatively correlated with use of psychological help. Both years of education and completion of high school were positively correlated with use of psychological help. The younger subjects and the better-educated subjects tended to use psychotherapy or counseling more frequently than the older and less-educated subjects. Both years of education and use of psychological help were negatively correlated with industry work assignment.

Three of the four significant predictors were selected for inclusion in the multiple regression analysis. Since years of education and completion of high school were highly intercorrelated and had essentially the same correlation with the criterion, only one, years of education, was included. The multiple correlation of years of education, industry versus nonindustry

vocational assignment, and use versus nonuse of psychological help, with employed versus not employed was 0.34. The intercorrelations of these variables and the beta coefficients are shown in table 3. Although the differences between these are small, it may be noted that the rank order of the beta coefficients was industry assignment, use of psychological help, and years of education, respectively. The multiple correlation of 0.34 accounted for 11 percent of criterion variance.

## Discussion

The correlation of educational level with employment agrees with the theory that the employment market generally emphasizes some minimal educational requirements. Studies by Gordon and Flyer (6) and Sells and Mace (7) have indicated that education (with a critical point at high school graduation) among other variables is significantly related to on-the-job success of enlisted personnel in the Air Force.

Psychotherapy or counseling may have helped patients toward vocational adjustment, but the correlation of psychological help with employment may also mean that the motivation which prompted patients to use available treatment also prompted them to get and hold jobs. In this connection also, completion of high school was significantly correlated with employment only when we counted the equivalency achievers with the high school graduates. Although the improved educational status of the equivalency achievers may have directly helped in employment, the motivation which prompted them to take courses and pass the tests may also have prompted them to get and hold jobs.

The correlation of educational level with use of psychological help perhaps coincides with the observation of Hollingshead and Redlich (8) that psychiatric patients of middle and upper social classes obtain psychotherapy more frequently than patients of the lower social class.

Although we obtained a negative correlation of industry assignment with posthospital employment, the data suggest that patients with less favorable prospects for posthospital employment may have accepted and stayed in their industry assignments. The industry subjects were less educated and used psychological help less frequently.

**Table 3. Multiple regression of three predictors on employment versus nonemployment<sup>1</sup>**

Predictors	Beta	Years of education 3	Industry assignment 2	Use of psychological help 1	Employment 0
3-----	0.14	1.00	-0.27	0.37	0.24
2-----	-.18	-----	1.00	-.20	-.25
1-----	.15	-----	-----	1.00	.24
0-----	-----	-----	-----	-----	1.00

<sup>1</sup>  $R_{0.321}=0.34$ .  $P<0.01$ .

Duvall excluded former patients confined in institutions from the Lexington group of employable males (4). When we exclude the 11 subjects of the Fort Worth group who were confined in institutions, the percentage employed becomes 74 percent. In contrast, Duvall found an employment rate of 37 percent. Post-hospital compulsory supervision of the Fort Worth patients probably contributed substantially to their higher employment rate. Of Duvall's 1,105 male subjects, 924 (84 percent) were voluntary patients. Most voluntary patients leave the hospital against medical advice and only infrequently have compulsory supervision. Of Duvall's 181 prisoner patients, probably none had compulsory supervision for 5 years after discharge.

We plan to test the results of our study by further followup studies.

### Summary

Information about employment status 1 year after discharge, from the Public Health Service Hospital, Fort Worth, Tex., of 100 former narcotic addict patients was obtained from their probation officers. The patients had compulsory supervision for at least 1 year following discharge. Sixty-three were reported to be employed, and six of these were engaged in skilled occupations which they had learned in the hospital. Thirty percent of the unemployed were in further legal difficulty.

Years of education was positively correlated with posthospital employment. Completion of high school was also correlated with employment, but the correlation was statistically sig-

nificant only when 14 patients who had earned high school equivalency certificates during hospitalization were counted as having completed high school. Use of psychotherapy or counseling during hospitalization was positively correlated with employment. Principal work assignment in a production line industry with pay during hospitalization was negatively correlated with employment.

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